Due: 2/28/17 at 5:00PM

Instructions: Your answers to the following questions do not need to be lengthy or written in complete sentences, but should reflect preparation for our discussion about Chapter 5 at the beginning of class.

Questions:

1. What does it mean when we say that a point is equidistant from two lines?

    It means that the lengths of the perpendicular segments from the point to the two lines are equal.

2. How is the location of the circumcenter of a triangle related to the type of triangle (acute, right, or obtuse)?

    The circumcenter of an acute triangle is inside the triangle, the circumcenter of a right triangle is on the triangle, and the circumcenter of an obtuse triangle is outside the triangle.

3. In what type of triangle are circumcenter and incenter at the same point? In this case, are the circumcenter and incenter at the center of the same circle? Explain.

    The orthocenter of an acute triangle is inside the triangle, the orthocenter of a right triangle is on the triangle, and the orthocenter of an obtuse triangle is outside the triangle.

4. How is the location of the orthocenter of a triangle related to the type of triangle (acute, right, or obtuse)?

    The orthocenter of an acute triangle is inside the triangle, the orthocenter of a right triangle is on the triangle, and the orthocenter of an obtuse triangle is outside the triangle.

5. In what type of triangle are the three medians the same segments as the three perpendicular bisectors, the three angle bisectors, and the three altitudes? What does this tell you about the four types of centers for this type of triangle?

    In an equilateral triangle, the circumcenter and incenter are the same point, but the circumcircle and incircle are not the same circles. These are two circles with the same center, but the circumcircle goes around the triangle, while the incircle is inside it.

6. How is the statement "the shortest distance between two points in on a straight line" related to the Triangle Inequality Theorem?

    In any triangle ABC, the shortest distance from A to C is AC (the length of AC), while AB + BC is the length of a longer path between the same two points. This statement is equivalent to the Triangle Inequality Theorem: AB + BC > AC.

Muddiest Point:

What questions do you have about the notes you took in Chapter 5, or anything from this week?

MML Homework Questions:

Are there any MML homework problems from Chapter 5 that you would like to discuss?